

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Amendment of Part 97	)	RM-11306
Of the Commission's Rules	)	
Governing the Amateur	)	
Radio Service Concerning	)	
Permitted Emissions and	)	
Control Requirements	)	

**To the Commission:**

**Comments of Nickolaus E. Leggett, N3NL  
Amateur Radio Operator**

The following are formal comments on the American Radio Relay League's "regulation by bandwidth" petition. I am a certified electronics technician (ISCET and NARTE) and an Extra Class amateur radio operator (call sign N3NL). I have a Master of Arts degree in Political Science from the Johns Hopkins University. I am also an inventor holding three U.S. Patents. My latest patent is a wireless bus for digital devices (U.S. Patent # 6,771,935).

**General Comments**

The ARRL's proposed bandwidth regulations are a reasonable concept for the future of amateur radio regulation. These regulations would allow new radio communication technologies to be invented, developed, and applied by amateur radio operators without the need for changes to the Commission's regulations. At the same time, these regulations would allow amateur radio

operators to continue using their traditional communications modes such as Morse Code (continuous wave), double-sideband amplitude modulation, single-sideband amplitude modulation, frequency modulation, radio teletype, and analog television.

This provides a flexibility that allows amateur radio operators to develop and embrace radically new radio technologies. I very much appreciate this as an inventor. While at the same time, amateur radio would continue to support useful older modes such as Morse Code. Hybrid new and old modes such as bandwidth-filtered spark transmitter output would also be possible.

Personally I am interested in this flexibility for developing communications devices that can be home built directly from hardware store parts. These devices would be useful in both intense emergencies, such as electromagnetic pulse (EMP) attacks, and difficult economic and social times such as an economic depression.

### **Modes for Beginning Amateur Radio Operators**

The Commission should make sure that Morse Code and double-sideband amplitude modulation are accommodated in the new rules. These two modes are technologically simple and they assist the new operator in learning electronics and radio. New comers to amateur radio can easily build and service Morse Code and AM transmitters and receivers. This introduces

them to the technology of radio and gets them on the air with equipment that they built themselves.

As they acquire experience, they will develop a firm knowledge of electronics and advance on to other more complex communications modes.

### **Measuring Bandwidth**

The rules should explicitly state that amateur radio operators are NOT required to measure the actual bandwidth of their transmitted signals. Bandwidth measurements require expensive equipment that amateurs cannot afford. In addition, the procedure for bandwidth measurements is too complex for the beginning operator to deal with.

The ARRL has structured its proposal so that the traditional amateur radio transmission modes can be accommodated without the need for bandwidth measurements. The traditional modes fit within the bandwidths specified in their proposal. In addition, amateurs who experiment with new communications modes can compute the expected bandwidth based on the data throughput and other aspects of their stations.

Eventually, low-cost bandwidth measurement devices will be invented. Indeed, ham radio operators operating under these new rules would have an opportunity to invent such devices. The Commission should revisit this subject in ten years or so to see if actual real-time bandwidth measurements have become practical and desirable in the amateur radio service.

### **Encrypted Transmissions**

The Commission should make sure that no encrypted transmissions are allowed in the amateur radio service. The amateur radio service is not a common carrier that transports private communications for various customers. Amateur radio is an open cooperative radio service where operators interested in radio work together to accomplish useful things. Secrecy has no part in amateur radio. Instead amateur radio is open frequencies for open interactions. Let's keep it that way. Any new codes used on the amateur radio bands should be promptly published on the Internet so that other hams can participate in and observe the communications. All transmissions should be in plain language.

Also, legal encrypted communications would tempt organized crime and even terrorists to attempt to use the significant world-wide communications capabilities of amateur radio. Press reports of National Security Agency (NSA) surveillance of telephone and Internet traffic would make it even more likely that this would occur.

### **Consensus Proposal**

The ARRL's proposed bandwidth regulations are based on a very open process that included an ARRL comment period where hundreds of comments were received and incorporated into the proposed rules. This has resulted in a proposal that reflects a lot of the thinking in the amateur radio service.

### **Requested Action**

The Commission should develop new regulations based on this ARRL proposal.

Respectfully submitted,

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